

Appl. No. 08/759,108
Amdt. Dated: August 23, 2004
Reply to Office Action of July 9, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) An absorbent composition comprising a mixture of:
 - a) an acidic water-swellable, water-insoluble polymer having a pKa between about 2 and about 12 wherein the acidic water-swellable, water-insoluble polymer comprises acidic functional groups and has at least about 50 molar percent of the acidic functional groups in free acid form; and
 - b) a basic material;

wherein the absorbent composition exhibits a Free Swell value that is at least about 15 grams per gram of absorbent composition and a Time to Reach 60 Percent of Free Swell Capacity value of at least about 5 minutes and wherein the mixture is not a molecular level dispersion of the acidic water-swellable, water-insoluble polymer and the basic material.
2. (original) The absorbent composition of Claim 1 wherein the acidic water-swellable, water-insoluble polymer has a pK_a between about 2 and 10.
3. (canceled).
4. (previously presented) The absorbent composition of Claim 1 wherein the acidic water-swellable, water-insoluble polymer has at least about 70 molar percent of the acidic functional groups in free acid form.
5. (original) The absorbent composition of Claim 1 wherein the acidic water-swellable, water-insoluble polymer has a weight average molecular weight greater than about 100,000.
6. (original) The absorbent composition of Claim 5 wherein the acidic water-swellable, water-insoluble polymer has a weight average molecular weight greater than about 200,000.
7. (previously presented) The absorbent composition of Claim 1 wherein the acidic water-swellable, water-insoluble polymer is prepared from a base polymer selected from the group

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consisting of polyacrylamides, polyvinyl alcohols, ethylene maleic anhydride copolymer, polyvinylethers, polyacrylic acids, polyvinylpyrrolidones, polyvinylmorpholines, carboxymethyl celluloses, carboxymethyl starches, hydroxypropyl celluloses, algin, alginates, carageenans, acrylic grafted starches, acrylic grafted celluloses, polyaspartic acid, polyglutamic acid, and copolymers comprising at least two of the preceding polymers.

8. (previously presented) The absorbent composition of Claim 1 wherein the basic material is selected from the group consisting of polyamines, polyimines, polyamides, polyquaternary ammoniums, chitins, chitosans, polyasparagins, polyglutamines, polylysines, polyarginines, organic salts, aliphatic amines, aromatic amines, imines, amides, metallic oxides, hydroxides, salts, and mixtures thereof.
9. (currently amended) The absorbent composition of Claim 8 Claim 1 wherein the basic material is a water-swellable, water-insoluble polymer.
10. (original) The absorbent composition of Claim 9 wherein the water-swellable, water-insoluble polymer basic material has a pK_b between about 2 and 12.
11. (original) The absorbent composition of Claim 1 wherein the acidic water-swellable, water-insoluble polymer and the basic material are present in the absorbent composition in a molar ratio between about 10:1 and 1:10.
12. (currently amended) The absorbent composition of Claim 1 wherein the absorbent composition has a Free Swell value of at least about 20 grams per gram of absorbent composition.
13. (previously presented) The absorbent composition of Claim 1 wherein the absorbent composition has a Time to Reach 60 Percent of Free Swell Capacity value of between about 10 minutes and 200 minutes.
14. (original) The absorbent composition of Claim 1 wherein the absorbent composition has an Absorbency Under Load value of at least about 15.
15. (original) The absorbent composition of Claim 1 wherein the absorbent composition has a Time to Reach 60 Percent of Absorbency Under Load Capacity value of at least about 5 minutes.
16. (original) The absorbent composition of Claim 1 wherein the water-swellable, water-insoluble polymer comprises acidic functional groups and has at least about 50 molar percent of the

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acidic functional groups in free acid form, has a weight average molecular weight greater than about 100,000, and the acidic water-swellable, water-insoluble polymer and the basic material are present in the absorbent composition in a molar ratio between about 10:1 and 1:10.

17. (withdrawn) An absorbent composition comprising a mixture of:
 - a) a basic water-swellable, water-insoluble polymer having a pK_b between about 2 to about 12; and
 - b) an acidic material;wherein the absorbent composition exhibits an Free Swell value that is at least about 15 grams per gram of absorbent composition and a Time to Reach 60 Percent of Free Swell Capacity value of at least about 5 minutes.
18. (withdrawn) The absorbent composition of Claim 17 wherein the basic water-swellable, water-insoluble polymer has a pK_b between about 2 to about 10.
19. (withdrawn) The absorbent composition of Claim 18 wherein the basic water-swellable, water-insoluble polymer comprises basic functional groups and has at least about 50 molar percent of the basic functional groups in free base form.
20. (withdrawn) The absorbent composition of Claim 19 wherein the basic water-swellable, water-insoluble polymer has at least about 70 molar percent of the basic functional groups in free base form.
21. (withdrawn) The absorbent composition of Claim 17 wherein the basic water swellable, water-insoluble polymer has a weight average molecular weight greater than about 100,000.
22. (withdrawn) The absorbent composition of Claim 21 wherein the basic water-swellable, water-insoluble polymer has a weight average molecular weight greater than about 200,000.
23. (withdrawn) The absorbent composition of Claim 17 wherein the basic water-swellable, water-insoluble polymer is prepared from a base polymer selected from the group consisting of polyamines, polyethyleneimines, polyacrylamides, polyquaternary ammoniums, chitin, chitosan, polyasparagins, polyglutamines, polylysines, polyarginines, and copolymers thereof.
24. (withdrawn) The absorbent composition of Claim 17 wherein the acidic material is selected from the group consisting of polyacrylic acid, polymaleic acid, carboxymethyl cellulose, alginic

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acid, polyaspartic acid, polyglutamic acid, aliphatic acids, aromatic acids, metallic oxides, salts, and mixtures thereof.

25. (withdrawn) The absorbent composition of Claim 24 wherein the acidic material is a water-swellable, water-insoluble polymer.
26. (withdrawn) The absorbent composition of Claim 25 wherein the water-swellable, water-insoluble polymer acidic material has a pK_a between about 2 to about 12.
27. (withdrawn) The absorbent composition of Claim 17 wherein the basic water-swellable, water-insoluble polymer and the acidic material are present in the absorbent composition in a molar ratio between about 10:1 to about 1:10.
28. (withdrawn) The absorbent composition of Claim 17 wherein the absorbent composition has a Free Swell value of at least about 20.
29. (withdrawn) The absorbent composition of Claim 17 wherein the absorbent composition has a Time to Reach 60 Percent of Free Swell Capacity value of between about 10 minutes to about 200 minutes.
30. (withdrawn) The absorbent composition of Claim 17 wherein the absorbent composition has an Absorbency Under Load value of at least about 15.
31. (withdrawn) The absorbent composition of Claim 17 wherein the absorbent composition has a Time to Reach 60 Percent of Absorbency Under Load Capacity value of at least about 5 minutes.
32. (withdrawn) The absorbent composition of Claim 17 wherein the water-swellable, water-insoluble polymer comprises basic functional groups and has at least about 50 molar percent of the basic functional groups in free base form, has a weight average molecular weight greater than about 100,000, and the basic water-swellable, water-insoluble polymer and the acidic material are present in the absorbent composition in a molar ratio between 10:1 to about 1:10
33. (previously presented) A disposable absorbent product comprising a liquid-permeable topsheet, a backsheet attached to the topsheet, and an absorbent structure positioned between the topsheet and the backsheet wherein the absorbent structure comprises an absorbent composition comprising:

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a) an acidic water-swellable, water-insoluble polymer having a pK_a between about 2 and about 12 wherein the acidic water-swellable, water-insoluble polymer comprises acidic functional groups and has at least about 50 molar percent of the acidic functional groups in free acid form;
and

b) a basic material;

wherein the absorbent composition exhibits a Free Swell value that is at least about 15 grams per gram of absorbent composition and a Time to Reach 60 Percent of Free Swell Capacity value of at least about 5 minutes and wherein the absorbent composition is not a molecular level dispersion of the acidic water-swellable, water-insoluble polymer and the basic material.

34. (withdrawn) A disposable absorbent product comprising a liquid permeable topsheet, a backsheet attached to the topsheet, and an absorbent structure positioned between the topsheet and the backsheet wherein the absorbent structure comprises an absorbent composition comprising:

a) a basic water-swellable, water-insoluble polymer having a pK_b between about 2 to about 12
and:

b) an acidic material;

wherein the absorbent composition exhibits an Free Swell value that is at least about 15 grams per gram of absorbent composition and a Time to Reach 60 Percent of Free Swell Capacity value of at least about 5 minutes.